

IN THE CLAIMS:

1. (currently amended) A washing machine comprising:

a tub;

a resistance network comprising a sensor, a resistor, and a voltage source, said sensor positioned and configured to sense a conductivity of a fluid in said tub; and

a controller operatively coupled to said sensor and configured to control an amount of the fluid in said tub during a rinse cycle based on the conductivity of the fluid measured at an end of a wash cycle, said controller configured to:

determine a desirable achievable rinse level;

at predetermined water levels during the rinse operation, measure an average liquid conductivity;

calculate an overall change in conductivity based on the measured average liquid conductivity at each predetermined water level;

compare the calculated overall change in conductivity to the desirable achievable rinse level; and

cease the rinse operation when the overall change in conductivity exceeds an acceptable change percentage of the desirable achievable rinse level.

2. (previously presented) A washing machine according to Claim 1, wherein said sensor is positioned within said tub.

3. (previously presented) A washing machine according to Claim 1, wherein said sensor is positioned outside said tub.

4. (previously presented) A washing machine according to Claim 1, wherein said sensor is configured to sense an initial conductivity of the fluid during the wash cycle without detergent.

5. (previously presented) A washing machine according to Claim 4, wherein said sensor is further configured to sense a final conductivity of the fluid after the wash cycle with detergent.

6. (previously presented) A washing machine according to Claim 5, wherein said controller is configured to determine a desirable achievable rinse level by calculating the difference between the initial conductivity and the final conductivity.

7. (previously presented) A washing machine according to Claim 1, wherein said controller is configured to measure the conductivity of the fluid sensed by said sensor during the wash cycle without detergent and during the wash cycle with detergent.

8. (original) A washing machine according to Claim 7, wherein said controller is configured to measure the conductivity of the fluid sensed by said sensor over at least a 3 second period.

9. (previously presented) A washing machine according to Claim 7, wherein said controller is configured to calculate an overall change of conductivity of the fluid.

10. (previously presented) A washing machine according to Claim 9, wherein said controller is configured to compare the overall change of conductivity with a desirable achievable rinse level.

11.-23. (canceled)